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Cost Effectiveness Study Methodology as Applied to EPA's (Environmental Protection Agency's) Directives System

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SPECIAL MANAGEMENT REPORT

Cost Effectiveness Study Methodology As Applied To EPA's Directives System

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SPECIAL MANAGEMENT REPORT

COST EFFECTIVENESS STUDY METHODOLOGY AS APPLIED TO EPA'S DIRECTIVES SYSTEM

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Cost Effectiveness Study Methodology as Applied to EPA Directives System

Introduction

In an effort to improve management practices within the Office of Administration (OA), the Assistant Administrator (AA) for Administration asked his Management and Organization Division (MOD) to develop and test a prototype analytic approach to determine how to provide better service at less cost. MOD developed a new combination of time-tested tools to review the cost and effectiveness of an existing process; and to project alternatives to that process at differing cost and effectiveness levels. The purpose of this report is to share this methodology and to increase awareness that it may be applied to other major processes/systems both within and outside of the Federal Government. A detailed study outline is located in the Appendix.

The MOD study team and the AA reviewed information on the operations of all major processes in OA to determine which one should be selected for a pilot study. Factors such as the level of resources committed to the process, the importance of process products/results to Agency operations, management's perceptions of procedural inefficiencies, and MOD's knowledge of the process were considered before the AA selected the Agency-wide directives system for review.

His selection was based primarily on the fact that MOD is responsible for managing the directives system, and therefore the study team was particularly knowledgeable about that process. He believed that in testing the new cost effectiveness methodology, familiarity with the subject matter would be an important advantage in the team's ability to evaluate the utility of the analytic approach.

The study resulted in cosiderable projected returns to the Agency - a 60% reduction in process costs and significantly improved effectiveness - through modifying directives system procedures and taking actions to change employee behavior in the use of directives. MOD implemented its study recommendations successfully over the six months following the study effort.

After completion of the pilot, the AA directed MOD to conduct two additional cost effectiveness reviews in OA. Both efforts provided insights into the appropriate use of the study methodology:

- The study of the processing of SES personnel actions in the Personnel Management Division indicated that MOD's cost effectiveness methodology should be applied to processes which are resource intensive. "Small" processes such as this one cannot yield the cost reduction to make the investment in a thorough, comprehensive study approach worthwhile.

- The study of the personal property management system indicated that the methodology, with modification, can be applied successfully to situations in which a major system should exist, but does not exist. Recommendations from this study were designed to lay the foundation for the development of an Agencywide personal property management system. The study's results will be the subject of a second special management report.

Summary

To demonstrate the successful application of MOD's cost effectiveness methodology, this report presents the details and results of the pilot study conducted of EPA's directives system. The directives system is the process EPA uses to develop, approve and disseminate Agencywide, policies and procedures in the form of orders and manuals.

This report is organized according to the three phases of the cost effectiveness methodology, which are illustrated in Chart 1. "Study Phase I: Develop an Inventory of the Major Processes," explains how the directives system was identified as a candidate for the pilot study. "Study Phase II: Determine the Cost Effectiveness of the Current Process," describes the data gathering and analyses necessary to assess the Agency's resource investment in support of the directives system and the success of the system in achieving the results management intended for it. "Study Phase III: Develop More Cost Effective Alternatives," summarizes how alternatives to the existing system were designed, and which alternative was recommended and chosen for implementation. Included finally is a brief discussion of the implementation of the new, simplified system.

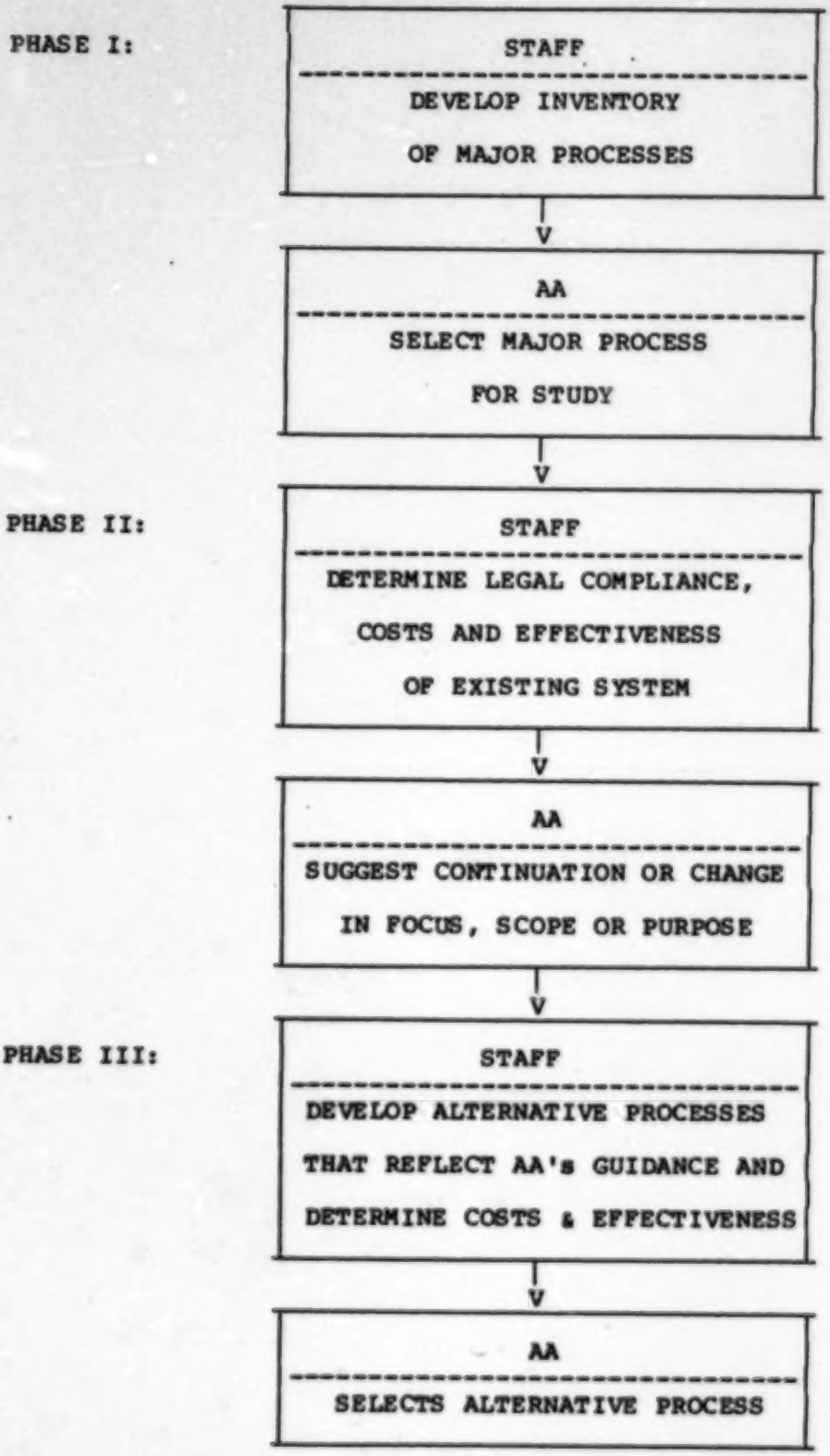
As a result of the use of this methodology, MOD determined that the EPA directives system was not credible in terms of legal compliance and that the system was burdened with administrative redundancies. The study showed that the system's products -- sets of orders and manuals retained in offices across the Agency -- were unreliable and outdated, and that EPA employees in general did not know about or use directives.

To correct these deficiencies, alternative processes for managing the directives system were developed and evaluated. The alternative recommended for implementation promised an initial, potential annual cost reduction of approximately $700,000 (just over 60% of the operating expenses of the existing system) while producing a more reliable, legal and usable directives system.

This study was conducted, at an analytical staff salary investment of approximately $23,000, by a study team consisting of a team leader almost half time, and two analysts contributing just over half of their time; the study effort (all three phases) took six months to complete. The following discussion explains in detail how the team applied the cost effectiveness methodology to EPA's directives system.

CHART 1

MAJOR STEPS IN PROCESS COST EFFECTIVENESS REVIEW METHODOLOGY



Study Phase I: Develop an Inventory of Major Processes (1 month)

The object of the first phase of the methodology was to develop an inventory of the major processes within OA, and to recommend to top management processes appropriate for subsequent detailed study. The development of the inventory included the following major steps:

- Defining the terms "Major" and "Process":

  "Major" - Intended to have a significant effect on the operations of the Agency involving 10 or more FTEs and requiring interaction with other Divisions/Staffs.

  "Process"- A systematic sequence of actions with an identifiable beginning, directed towards the creation of an end product.

- Constructing a list of processes from existing documents (planning documents, manuals, workload analyses, etc.) refining the list by interviewing managers - using that opportunity to probe for any problems they perceive might exist in the operation of each process, and any improvements they think should be considered seriously by the study team.

- Sending a questionnaire on each process to the responsible Division/Staff to elicit detailed information on the purpose, authority, current and future costs, workload requirements, documentation, monitoring methods and previous studies of the process.

The final inventory identified 25 major processes within OA's nine Divisions/Staffs.

To determine potential processes for further study, MOD:

- Identified possible selection criteria. Such criteria as process size (investment, workload) and projected workload increases associated with projected decreases in resources, were chosen to indicate processes with a potential for cost savings. Criteria such as managerial interest in changing process scope or direction and lack of process control mechanisms were chosen to indicate a potential for increased effectiveness;

- Applied the selection criteria to each process on the inventory list, and prioritized the processes accordingly.

MOD identified six major processes as particularly worthy of further study.

The final step in this study phase was to brief the AA on the results from developing the process inventory so that he might choose one or more processes for study during fiscal year 1982. The briefing included: a general description of each process, the estimated Agencywide resource investments and workload projections for each process, the selection criteria and the recommendation of processes as candidates for further study.

From these recommended processes the AA selected the Agency's directives system as the subject for a pilot study. He believed that because MOD managed the system, the study team's considerable knowledge of the process would be an advantage in testing the utility of the cost effectivenss methodology.

Study Phase II: Determine the Cost Effectiveness of the Current Process (3 months)

The object of the second phase of the study was to detail the cost and the effectiveness of the existing directives system; to elicit management's views on the appropriate purpose and dimensions of the system; and to determine what change in the system top management might want to pursue in Phase III of the study. Because major processes extend into other processes, the first challenge in this phase was to define the scope of the study effort.

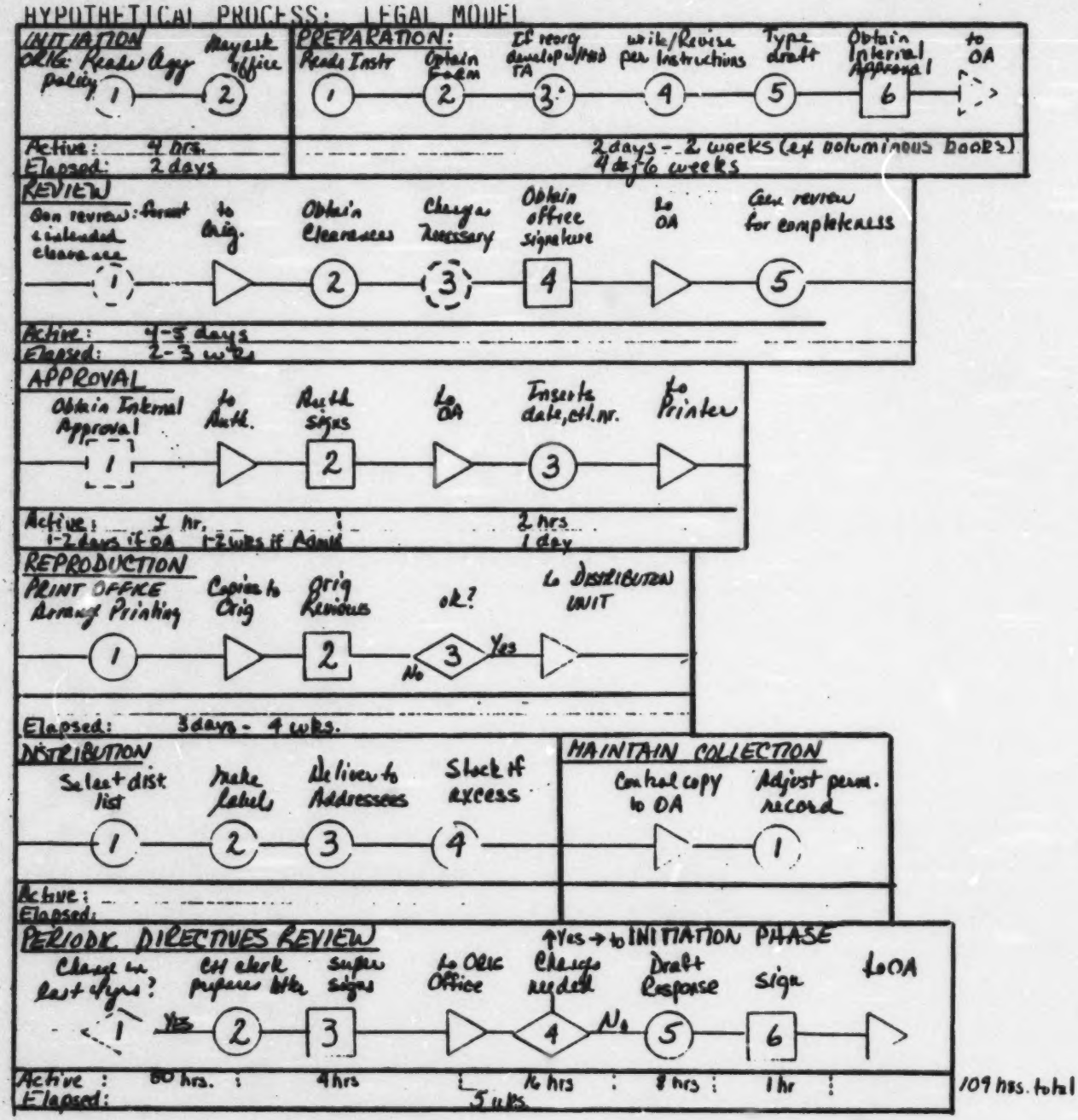
The development of a theoretical model of a directives system provided a structure for determining study scope. After a thorough review of the legal and regulatory requirements for an Agencywide directives system, the study team designed a model of an ideal "legal" system. This model was not constrained by practical or political considerations. In addition to assisting the team in defining a study scope, the model was used as a tool to evaluate the legal compliance of EPA's existing directives system.

To avoid biasing the development of this initial model, the study team deferred reviewing detailed descriptions of the existing directives system until after the model was completed. The "legal" model consisted of a series of the legally mandated process steps, such as directive initiation, preparation, review, approval, which was graphically presented in the form of a flow chart (see Chart 2). Next, the study team interviewed the manager responsible for the directives system to learn her perception of the purpose of the process and the Agency's need for it; whether the process was accomplishing its purpose; and what measures to use to determine this.

With the legal requirements and management's purpose in mind, the team designed the data collection instruments necessary to document the steps in the actual process, determine the process costs, and assess the effectiveness of the process. Interview guides were used to obtain this information from persons involved in processing directives: e.g. the originators of directives, managers, analysts, typists, those responsible for printing and distributing directives, the Administrator's Executive Office.

From these interviews the team identified process products, decisions and timeframes, equipment required to support the system, problems in the operation of the process and suggestions for possible improvements. They constructed a detailed flowchart of the existing system, including the actual time required to perform each step and the time elapsed between major steps. The chart indicated the steps where other offices became involved in the process and clearly illustrated discrepancies or redundancies in the system, especially when contrasted with the theoretical

HYPOTHETICAL PROCESS: LEGAL MODEL



model, which in the course of the study was expanded to include substeps, actors, time frames etc. Examination of the files which document the review, clearance and approval of each directive verified the flowchart data, particularly major decision points and the elapsed time measures.

Once the team had detailed the entire system in the flow chart, they were prepared to determine the direct and indirect costs of the process. To determine labor costs, they examined the flowchart to find the amount of time spent on each step of the process, and established hourly wages according to the position descriptions which provided the grade levels of all persons identified on the flowchart. Cost data on printing and distributing directives and on maintaining files of directives in the Agency had been gathered in the interviews. Overhead costs (rent and utilities) were calculated on a per FTE basis, and were added to the above costs to comprise a total directives system cost per year of $431,855 (see Chart 3). Budget data provided gross benchmarks against which to compare the team's determination of the total cost of the process.

To evaluate the effectiveness of the current directives system, MOD determined significant criteria by which to measure effectiveness. This evaluation goes beyond measuring merely the operational efficiencies of the substeps of a process; it is the establishment of measures of how well the entire process achieves management's intended effect on the Agency. The study team designed and conducted audits of how well the process worked according to those criteria, and from the audit results, refined further the criteria which seemed of particular significance. For example, to assess the utility of directives the team members reviewed Agencywide orders and manuals for quality, currency and scope. Also, to assess the quality of directives distribution they rated the currency of a sample number of directives collections at Headquarters by checking for the presence of the five most recently issued directives; and they rated the completeness of the collections by sampling for six manuals.

Other measures of the effectiveness of the system's products and process were tested by sending questionnaires to originators of directives, reviewers, users and file managers. The questionnaire was designed to capture information on: the use and understanding of directives, the frequency of use; and the comprehensiveness, timeliness and predictability of the directives system.

The overall effectiveness of the process was assessed against key criteria based on the data gathered from the interviews, the files survey, the process audits and the questionnaires. See Charts 4 and 5 for the effectiveness ratings given the existing process and the criteria proposed for Phase III review.

CHART 3

COSTS OF THE EXISTING SYSTEM (FY '80 $)

PROCESS STEPS	WAGES	OVERHEAD	CONTRACT & OTHER COSTS	TOTAL COSTS	UNIT COST	STEP AS A % OF TOTAL COSTS
Initiation (Need Identification)	6,330	499		6,829	57	2%
Originator Preparation						
- Draft Proposal	72,112	7,853		79,965	672	24%
- Preliminary Clearance	14,198	1,654		15,852	133	
- Word Processors			9,996	9,996	84	
Review and Clearance						
- MOD and Originator Staff	54,610	6,307		60,917	512	
- MOD Word Processor			9,996	9,996	84	
- Duplication and Mailing			953	953	8	36%
- Clearance						
-- Comprehensive Clearance					618	
--- Top Management	21,355	1,036		22,391		
--- Staff	44,992	6,202		51,194		
— Partial Clearance	9,083	1,076		10,159	85	
Approval						
- MOD Staff	53,903	5,361		59,264	498	18%
- Approving Officials	8,154	424		8,578	72	
- MOD Word Processor			9,996	9,996	84	
Printing						
- MOD Print Preparation	1,606	200		1,806	15	6%
- Print Plant Costs			25,560	25,560	215	
Distribution						
- Distribution Unit			1,200	1,200	10	2%
- Postage Costs			5,303	5,303	45	
- Mailroom Handling Costs			236	236	2	
File Maintenance						12%
- Directives Recipients	42,978	8,682		51,660	434	
TOTAL	$329,321	$ 39,294	$ 63,240	$431,855	$3,629	

EFFECTIVENESS OF THE EXISTING DIRECTIVES SYSTEM

CRITERIA	RATING*
- GENERAL AWARENESS	5
- OPERATIONAL KNOWLEDGE	3
- PREDICTABLE SYSTEM	8
- OVERALL SATISFACTION WITH MOD SERVICE	7
- COMPREHENSIVENESS	4
- UNDERSTANDABLE PRODUCT	9
- TIME	2
- DISTRIBUTION	6

* Scale: Low = 1 to High = 10

EFFECTIVENESS CRITERIA

PROPOSED FOR PHASE III REVIEW

OF THE DIRECTIVES SYSTEM

- **PROCESS**
  - AGENCY AWARENESS OF THE SYSTEM
  - ACCESS TO DIRECTIVES
  - PREDICTABILITY
  - TIME CONSUMED
  - UTILITY OF WRITTEN GUIDANCE
  - COMPREHENSIVE COLLECTION OF AGENCY POLICY AND PROCEDURES
  - NUMBER OF AA-SHIPS AND REGIONS HAVING AN INTRA-OFFICE PROCESS
  - APPROPRIATE CLEARANCES
  - CLEAR UNDERSTANDING OF RESPONSIBILITIES
  - COMPLIANCE

- **PRODUCTS**
  - FORMAT CONSISTENCY
  - UNDERSTANDABILITY
  - UP TO DATE INFO
  - USEFULNESS

In summary, the team found that EPA's directives system lacked system oversight, did not comply with key legal requirements, and was saturated with redundant administrative steps. In addition, most sets of directives were incomplete and unreliable, and only half of the employees questioned were familiar with the content and location of directives. A very detailed review of these findings was presented to the manager of the directives system to determine her reactions and views on possible corrective measures for the existing system.

The final presentation of Phase II findings to the AA was to learn how, if at all, he wanted to change the overall purpose and scope of the process in order to establish parameters for the alternative options which would be developed in the third and final phase of the study. The briefing was a general summary of the directives system's costs, effectiveness, problems, and suggested improvements to the system, incorporating the system manager's perception of the purpose of the process.

The AA suggested that the study team design a minimal cost process, with the assumption that such a process would do no more than comply with minimum legal requirements. He indicated that other process options presented to him at least should reflect cost savings when compared with the existing system. In addition, he stressed that the utility of the directives system, particularly the final effect of Agencywide directives on employees' behavior, was a key factor in determining the system's success.

Study Phase III: Develop More Cost Effective Alternatives (2 months)

The object of this phase was to develop, verify, analyze and compare the cost and the effectiveness of feasible alternatives to the existing directives system. These alternatives reflected the decisions made by the AA the end of Phase II.

To identify the alternatives, the team arrayed the components of the process and arranged them in the order of the major steps developed in the flow charts of Phase II. The minimum requirements to satisfy the law for each step were listed and checked against a copy of the regulations. Next, feasible alternative ways to accomplish each step were arranged in a matrix without concern for how many options resulted. For example, in the directive initiation step, the different types of guidance to employees in how to produce a directive included: 1. only a basic policy statement and numbering system for directives, 2. a detailed manual, and 3. a detailed manual and a training course. After examining various possible combinations, of the cells in the matrix, the team decided to develop three process alternatives according to the type of management control exercised.

When the options were fully developed, the team applied the same effectiveness criteria to judge the three alternatives as were used to judge the existing system and its products in Phase II: e.g., understandability, usefulness, timeliness. Each criterion was rated low, medium or high for each option, using numerical values: low-1, medium-2, and high-3. Thus a total numerical value for effectiveness could be determined for each option. Individual criterion values were not weighted since each criterion was of equal importance to the AA. The team also assessed the alternatives in the context of the key consideration he had suggested: the likelihood an alternative system would change employee behavior.

Existing system costs as determined in Phase II, were used as a basis to project the direct costs of each alternative process. However, as they developed these costs for the alternatives, the study team realized that although they could scale down the direct process costs, hidden costs for the Agency would result. The hidden cost of doing business under the different options could be significantly different, even when the direct process costs were similar.

For example, there is a hidden cost for the hours lost across the Agency when people work without correct guidance because a directive is not readily available, and employees must repeat or revise their work. In one of the options official files of directives would be available at only seventeen major EPA locations Since many employees would consider it inconvenient to travel to those locations to copy the material, the hidden cost of this option was in avoiding having to go to those copies, either by finding

and using outdated copies, by trying to locate a person with correct information, or by working without instructions.

The team estimated that this pattern of behavior, resulting from the restrictions of this option, would cost at least one extra day's work per occurrence. Based on information from the Phase II survey about how employees respond to the existing system, the team estimated that this behavior would occur at least one third of the time. The survey indicated also that at least one person in each Division in EPA uses some directive once a week. From this data the team calculated that this pattern of behavior would result in a hidden cost to the Agency of $644,000 per year.

The team developed the hidden costs for each option using assumptions which were deliberately conservative, and even if the projected costs were not firm, the relative cost of each alternative was deemed reliable. This information is presented in Chart 6 (following page 11). Although implementation plans and costs for each alternative were not developed, significant one-time costs to initiate a specific alternative were investigated. For example, the costs associated with increasing the understanding and use of directives in the Agency by conducting an "awareness campaign" were projected. At this point the team was prepared to compare the total costs and the effectiveness of the various options.

The purpose of the AA's final briefing was to show how OA could manage the Agency's directives system more effectively at less cost. In preparing to make final recommendations to the AA, team obtained the system manager's comments on what they planned to present. The AA received a summary of the relative costs and effectiveness ratings for the following three options:

- The minimal control option which required originators to assume total responsibility for the development, issuance and update of directives. This option showed the lowest direct cost, but it carried many hidden costs and also had a low effectiveness rating.

- The decentralized control option which instituted directives officers in each Assistant, Associate and Regional Administrator's Office to guide the development of directives and to maintain copies of current orders and manuals. This option cost more than the minimal option and was designed to achieve high levels of effectiveness, but lacked a few key process control points as checks against program/office biases in final directives proposals.

- The centralized control option which provided a slightly higher effectiveness rating than the decentralized option at less than 40% of existing system costs. It maintained in OA centralized control of key decisions in the system while streamlining administrative requirements considerably.

MOD recommended the centralized option for the following reasons: It provided third party review to check against inappropriate program bias in directives proposals and control against overlaps among Agencywide directives. It provided for uniform directives proposals to the Administrator. It established reliable, accessible files of directives throughout the Agency resulting in increased confidence in and use of the system by employees. Finally, it was consistent with the Agency's top management philosophy to manage the directives system centrally. The AA accepted the study team's recommendation.

CHART 6

DIRECT AND HIDDN COSTS OF THE EXISTING SYSTEM AD SYSTEM OPTIONS

TYPE OF COST	Existing System	OPTIONS		
		Minumum Contrd	Decentralized Control	Centralized Control
Direct Process Costs	$ 431,855	$ 110,80	$ 183,312	$ 185,091
Hidden Costs To Do Business	$ 694,800	$ 890,80	$ 242,000	$ 242,000
TOTAL COSTS	$ 1,126,655	$ 1,001,70	$ 425,312	$ 427,091

Implementation

Because the descriptions of the options presented to the the AA were necessarily general, a more detailed description of the recommended option was needed to convey that option to the persons who would implement it. The study team outlined a plan to make the task of implementing the chosen option easier and to ensure that all of the recommended changes were clearly identified. In this study, since it was a prototype, the team not only designed the implementation plan, but assisted in carrying it out. The plan and the status of its implementation to date follows.

1. To improve the system:

   - Provide to the Central Directives Officer a detailed explanation of the responsibilities of that position for system oversight, guidance, coordination and quality assurance. This was accomplished with written guidance and a thorough series of briefings by members of the study team.

   - Revise the Agency guidance for directives to reflect the new centralized control option in a format suitable for future automation. A new Directives Manual has been finalized and distributed to the Agency.

2. To improve the products and their accessibility:

   - Remove obsolete directives, consolidate and simplify others. Individual memorandums were sent to each office which originated these directives forwarding an assessment of the directives MOD identified for review and the changes which should be made. MOD received 100% response to this request, and most of these directives either have been cancelled or are being revised. Only a few will remain unchanged.

   - Establish approved directives files. A memorandum was sent to Agency managers requesting appointment of directive file managers, and providing instructions for establishing a complete, current collection of orders and manuals. All Regions, labs, remote locations and 50% of Headquarters offices have responded.

   - Prepare and distribute filing aids to all approved Agency directives collections. They have been printed and mailed.

3. To increase awareness and use of directives in EPA:

   - A desk-to-desk "Guide to Agency Directives" explained what directives are and provided a synopsis of the information contained in each manual.
   - The directives system was listed in the Administative Management Services Guide.
   - The revised directives system was noted in the EPA Times.

4. Ongoing efforts:

   - Announcements in EPA Times of noteworthy new directives.
   - A periodic audit of the directives system will be conducted by the Central Directives Officer.
   - The Agency is continuing its purge of obsolete directives.
   - MOD and the Management Information and Data Systems Division are researching the feasibility of automating the Agency's orders and manuals and using electronic mail to transmit them nationwide.

Conclusions

Everyone who participated in this pilot test is confident that this methodology can be applied successfully to other major processes/systems within and outside of OA. The methodology provided a comprehensive, systematic means to evaluate an existing process and to construct and evaluate alternative processes. Senior analysts at the Office of Management and Budget have indicated that this technique is at the leading edge of productivity assessment efforts among Federal Government organizations.

After the pilot test, the AA directed MOD to initiate reviews of two other OA processes in fiscal year 1982. In addition, the MOD Director anticipates opportunities to transfer the methodology (through training) to other EPA Offices and Federal Agencies at their request.

APPENDIX

COST-EFFECTIVENESS PROCESS REVIEW METHODOLOGY

Phase I: Select OA Test Process(es) for Review

I. Develop preliminary list of major processes for each Division of each office.

A. Define "major process".

B. Review Organization and Functions Manual, Delegations Manual and workload analysis to hypothesize preliminary list of major processes:

- title
- brief description of purpose
- planned resources

II. Refine preliminary list of major processes and complete the detailed inventory.

A. Explain "major process" and present preliminary list to Division Director. Determine necessary changes and identify responsible person to be interviewed for each process.

B. Schedule interviews and provide detailed inventory forms in advance of interview.

C. Conduct staff level interviews and complete detailed inventory forms.

D. Summarize the major processes in terms of Division goals and resources needed to support the processes.

E. Present inventory and summary to Division Director for comment. Obtain Division Director's thoughts on areas of major importance and areas of improvement.

III. Review inventory and summary with AA and recommend areas for study.

A. Prepare composite inventory.

B. Develop list of selection criteria.

C. Screen processes against selection criteria.

D. Determine percent of resources involved in processes.

E. Prepare briefing for AA to obtain approval for study.

Phase II: Determining Cost-Effectiveness of the Current Process

I. Determine if current process meets appropriate purpose and minimal acceptable standards of process performance.

A. List legal/regulatory requirements process should meet. Review relevant

(1) legislation
(2) external regulations
(3) EPA directives that establish responsibility for the process

Also, determine whether EPA must meet these requirements or whether another party (e.g. contractor, other Federal Agency) could.

B. Develop a hypothetical model of an optimal operational process to be used as a tool for evaluation of current process. It must address the purpose and meet the standards of the legal and regulatory requirements. The team will:

(1) identify appropriate process results: products, decisions
(2) identify key process steps
(3) sequence the key process steps according to critical inputs and managerial decision points

C. Detail the existing process (simultaneously with II.A. and B.)

(1) Based on:

(a) information from the Phase I inventory
(b) interviews with managers and others who have knowledge of the process
(c) examination of process products
(d) review of budget data and position descriptions, job standards
(e) other documentation written about the process

(2) Describe:

(a) the nature and number of results: products, decisions
(b) flow including significant inputs and decision points
(c) location of process steps in the Agency organization
(d) time frames
(e) equipment: lab, computers, etc.

(3) Calculate direct and indirect costs:

(1) staff within and outside managing office; FTE's grade/skill mix
(2) dollars: salaries, equipment, contracts, travel, overhead, etc.

D. Test actual process against hypothesized process. Identify:

(1) lack of achievement of minimal standards
(2) flow discrepancies: missing major steps, redundant steps
(3) decision point discrepancies
(4) major differences in time required
(5) major differences in the nature and number of results

E. Analyze test discrepancies and discuss with knowledgeable persons to determine the reasons for differences. Instigate OGC review of legal shortcomings of the process, if appropriate.

F. Review findings with Division Director (or comparable person) as part of II.C. below.

II. Assess Process Effectiveness (II.A. and II.B. occur simultaneously with I.C.).

A. Interview the Division Director or comparable person who has responsibility for process policy (rather than person who has responsibility for operational procedures) to determine his/her perception of process purpose.

B. Design and implement effectiveness test(s) of the process against the Division Director's statement of purpose. The team will:

(1) determine the process tasks to audit to ascertain process effectiveness
(2) ask Division Director for suggested tasks to audit
(3) sample Agency process clients to determine what they perceive of the effectiveness of the process
(4) conduct the process audits to evaluate actual effectiveness.

C. Discuss audit findings with the Division Director and discuss possible process modifications.

III. Brief the Assistant Administrator (or comparable person) to target the work for Phase III.

A. Explain the Division Director's perception of the process purpose and describe in general terms the process flow.

B. Explain any legal discrepancies or variances from the law or from the hypothesized model.

C. Report the costs associated with the process.

D. Summarize the effectiveness audit.

E. Discuss and resolve

(1) whether the AA believes the purpose fulfilled by the process is an appropriate way to focus the activities of the Division,
(2) what dimensions of the process the AA wants to explore in the alternatives developed in Phase III (e.g. changing the purpose of the process, conducting the same process more efficiently).

Phase III: Develop More Cost Effective Alternatives

I. Develop feasibile process alternatives according to the decisions made by the AA at end of Phase II.

   A. Identify major process steps

   B. Sequence steps

   C. Estimate timeframes

   D. Identify staffing levels

   E. Identify required equipment

II. Verify processes for legal/regulatory compliance (or waivers).

III. Analyze each process developed for increased efficiencies related to:

   A. Potential elimination of process duplications and illogical or unnecessary tasks.

   B. Opportunities for more efficient equipment use.

   C. Contracting out portions or all of the process.

   D. Changes in staff levels for task achievement and management decision making at least cost.

   E. Total turnaround time (Timeliness of product)

IV. Rate each process for major effectiveness criteria developed in Phase II with changes recommended by Assistant Administrator.

V. Cost out each process option.

   A. Labor costs

   B. Indirect costs

   C. Equipment costs

   D. Contract costs

E. Materials

F. Significant changes in operational costs resulting from implementation of option

G. One-time costs if significant or if they vary significantly among the alternatives

VI. Test the cost effectiveness of each process option.

A. Compare costs and effectiveness rating of each option to the current process.

B. Compare the costs and the effectiveness ratings of each option

VII. Make final recommendations to Agency management.

VIII. Develop guidelines for implementation of option AA chooses.